General

Guideline Title

Clinical practice guideline for the diagnosis and management of group A streptococcal pharyngitis: 2012 update by the Infectious Diseases Society of America.

Bibliographic Source(s)

Shulman ST, Bisno AL, Clegg HW, Gerber MA, Kaplan EL, Lee G, Martin JM, Van Beneden C. Clinical practice guideline for the diagnosis and management of group A streptococcal pharyngitis: 2012 update by the Infectious Diseases Society of America. Clin Infect Dis. 2012 Nov;55(10):e86-e102. [134 references] PubMed

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Bisno AL, Gerber MA, Gwaltney JM, Kaplan EL, Schwartz RH. Practice guidelines for the diagnosis and management of group A streptococcal pharyngitis. Clin Infect Dis 2002 Jul 15;35(2):113-25. [96 references]

Recommendations

Major Recommendations

Quality of evidence (high-quality, moderate-quality, low-quality, very low-quality) and strength of recommendation (strong, weak) ratings are defined at the end of the "Major Recommendations" field.

Recommendations for the Diagnosis of Group A Streptococcal (GAS) Pharyngitis

I. How Should the Diagnosis of GAS Pharyngitis Be Established?
Recommendations

1. Swabbing the throat and testing for GAS pharyngitis by rapid antigen detection test (RADT) and/or culture should be performed because the clinical features alone do not reliably discriminate between GAS and viral pharyngitis except when overt viral features like rhinorrhea, cough, oral ulcers, and/or hoarseness are present. In children and adolescents, negative RADT tests should be backed up by a throat culture (strong, high). Positive RADTs do not necessitate a back-up culture because they are highly specific (strong, high).
2. Routine use of back-up throat cultures for those with a negative RADT is not necessary for adults in usual circumstances, because of the low incidence of GAS pharyngitis in adults and because the risk of subsequent acute rheumatic fever is generally exceptionally low in adults with acute pharyngitis (strong, moderate). Physicians who wish to ensure they are achieving maximal sensitivity in diagnosis may continue to use conventional throat culture or to back up negative RADTs with a culture.
3. Anti-streptococcal antibody titers are not recommended in the routine diagnosis of acute pharyngitis as they reflect past but not current events (strong, high).

II. Who Should Undergo Testing for GAS Pharyngitis?
Recommendations

4. Testing for GAS pharyngitis usually is not recommended for children or adults with acute pharyngitis with clinical and epidemiological features that strongly suggest a viral etiology (e.g., cough, rhinorrhea, hoarseness, and oral ulcers; strong, high).
5. Diagnostic studies for GAS pharyngitis are not indicated for children <3 years old because acute rheumatic fever is rare in children <3 years old and the incidence of streptococcal pharyngitis and the classic presentation of streptococcal pharyngitis are uncommon in this age group. Selected children <3 years old who have other risk factors, such as an older sibling with GAS infection, may be considered for testing (strong, moderate).
6. Follow-up posttreatment throat cultures or RADT are not recommended routinely but may be considered in special circumstances (strong, high).
7. Diagnostic testing or empiric treatment of asymptomatic household contacts of patients with acute streptococcal pharyngitis is not routinely recommended (strong, moderate).

Recommendations for the Treatment of Patients with GAS Pharyngitis

III. What Are the Treatment Recommendations for Patients with a Diagnosis of GAS Pharyngitis?
Recommendations

8. Patients with acute GAS pharyngitis should be treated with an appropriate antibiotic at an appropriate dose for a duration likely to eradicate the organism from the pharynx (usually 10 days). Based on their narrow spectrum of activity, infrequency of adverse reactions, and modest cost, penicillin or amoxicillin is the recommended drug of choice for those non-allergic to these agents (strong, high).
9. Treatment of GAS pharyngitis in penicillin-allergic individuals should include a first generation cephalosporin (for those not anaphylactically sensitive) for 10 days, clindamycin or clarithromycin for 10 days, or azithromycin for 5 days (strong, moderate).

IV. Should Adjunctive Therapy with Nonsteroidal Anti-inflammatory Drugs (NSAIDs), Acetaminophen, Aspirin, or Corticosteroids Be Given to Patients Diagnosed with GAS Pharyngitis?
Recommendation

10. Adjunctive therapy may be useful in the management of GAS pharyngitis.
    i. If warranted, use of an analgesic/antipyretic agent such as acetaminophen or an NSAID for treatment of moderate to severe symptoms or control of high fever associated with GAS pharyngitis should be considered as an adjunct to an appropriate antibiotic (strong, high).
    ii. Aspirin should be avoided in children (strong, moderate).
    iii. Adjunctive therapy with a corticosteroid is not recommended (weak, moderate).

V. Is the Patient with Frequent Recurrent Episodes of Apparent GAS Pharyngitis Likely to Be a Chronic Pharyngeal Carrier of GAS?
Recommendations

11. The panel recommends that clinicians caring for patients with recurrent episodes of pharyngitis associated with laboratory evidence of GAS pharyngitis consider that they may be experiencing >1 episode of bona fide streptococcal pharyngitis at close intervals, but they should also be alert to the possibility that the patient may actually be a chronic pharyngeal GAS carrier who is experiencing repeated viral infections (strong, moderate).
12. The panel recommends that GAS carriers do not ordinarily justify efforts to identify them nor do they generally require antimicrobial therapy because GAS carriers are unlikely to spread GAS pharyngitis to their close contacts and are at little or no risk for developing suppurative or nonsuppurative complications (e.g., acute rheumatic fever; strong, moderate).
13. The panel does not recommend tonsillectomy solely to reduce the frequency of GAS pharyngitis (strong, high).

Definitions:

Strength of Recommendations and Quality of the Evidence			
Strength of Recommendation and Quality of Evidence	**Clarity of Balance between Desirable and Undesirable Effects**	**Methodologic Quality of Supporting Evidence (Examples)**	**Implications**

Strength of Recommendations and Quality of the Evidence			
Strength of Recommendation and Quality of Evidence	**Clarity of Balance between Desirable and Undesirable Effects**	**Methodologic Quality of Supporting Evidence (Examples)**	**Implications**
Strong recommendation, high-quality evidence	Desirable effects clearly outweigh undesirable effects, or vice versa	Consistent evidence from well-performed randomized controlled trials (RCTs) or exceptionally strong evidence from unbiased observational studies	Recommendation can apply to most patients in most circumstances. Further research is unlikely to change confidence in the estimate of effect.
Strong recommendation, moderate-quality evidence	Desirable effects clearly outweigh undesirable effects, or vice versa	Evidence from RCTs with important limitations (inconsistent results, methodologic flaws, indirect, or imprecise) or exceptionally strong evidence from unbiased observational studies	Recommendation can apply to most patients in most circumstances; further research (if performed) is likely to have an important impact on confidence in the estimate of effect and may change the estimate.
Strong recommendation, low-quality evidence	Desirable effects clearly outweigh undesirable effects, or vice versa	Evidence for at least 1 critical outcome from observational studies, RCTs with serious flaws or indirect evidence	Recommendation may change when higher-quality evidence becomes available; further research (if performed) is likely to have an important impact on confidence in the estimate of effect and is likely to change the estimate.
Strong recommendation, very low-quality evidence (very rarely applicable)	Desirable effects clearly outweigh undesirable effects, or vice versa	Evidence for at least 1 critical outcome from unsystematic clinical observations or very indirect evidence	Recommendation may change when higher-quality evidence becomes available; any estimate of effect for at least 1 critical outcome is very uncertain
Weak recommendation, high-quality evidence	Desirable effects closely balanced with undesirable effects	Consistent evidence from well-performed RCTs or exceptionally strong evidence from unbiased observational studies	The best action may differ depending on circumstances or patients or societal values. Further research is unlikely to change confidence in the estimate of effect
Weak recommendation, moderate-quality evidence	Desirable effects closely balanced with undesirable effects	Evidence from RCTs with important limitations (inconsistent results, methodological flaws, indirect, or imprecise) or exceptionally strong evidence from unbiased observational studies	Alternative approaches likely to be better for some patients under some circumstances. Further research (if performed) is likely to have an important impact on confidence in the estimate of effect and may change the estimate
Weak recommendation, low-quality evidence	Uncertainty in the estimates of desirable effects, harms, and burden; desirable effects, harms, and burden may be closely balanced	Evidence for at least 1 critical outcome from observational studies, RCTs with serious flaws, or indirect evidence	Other alternatives may be equally reasonable. Further research is very likely to have an important impact on confidence in the estimate of effect and is likely to change the estimate
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Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Group A streptococcal (GAS) pharyngitis (pharyngotonsillitis)

Guideline Category

Diagnosis

Management

Treatment

Clinical Specialty

Family Practice

Infectious Diseases

Internal Medicine

Pediatrics

Intended Users

Advanced Practice Nurses

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

- To provide recommendations on the management of group A streptococcal (GAS) pharyngitis among adult and pediatric patients; discuss diagnosis and management, and provide recommendations regarding antibiotic choices and dosing.
- To update the 2002 Infectious Diseases Society of America guideline on the treatment of GAS pharyngitis.

Target Population

Adult and pediatric patients with acute pharyngitis with possible group A streptococcal (GAS) pharyngitis (including those allergic to penicillin)

Interventions and Practices Considered

Diagnosis

1. Swabbing the throat and testing for group A streptococcal (GAS) pharyngitis by rapid antigen detection test (RADT) and/or culture
2. Back-up throat cultures for those with a negative RADT (not recommended routinely for adults; recommended for children)
3. Anti-streptococcal antibody titers (not recommended routinely)
4. Follow-up posttreatment throat cultures or RADT (not recommended routinely)
5. Diagnostic testing or empiric treatment of asymptomatic household contacts of patients with acute streptococcal pharyngitis (not recommended routinely)

Treatment/Management

1. Penicillin or amoxicillin (drugs of choice)
2. First-generation cephalosporin (for those not anaphylactically sensitive to penicillin)
3. Clindamycin
4. Clarithromycin
5. Azithromycin
6. Analgesic/antipyretic agent such as acetaminophen or a nonsteroidal anti-inflammatory drug (NSAID)

7. Avoidance of aspirin in children
8. Adjunctive therapy with a corticosteroid (not recommended)
9. Identifying GAS carriers (not recommended)
10. Tonsillectomy to reduce the frequency of GAS pharyngitis (not recommended)

Major Outcomes Considered

- Signs and symptoms of group A streptococcal (GAS) pharyngitis vs. viral infection
- Sensitivity and specificity of diagnostic methods for streptococcal pharyngitis
- Effectiveness of antimicrobial therapy in eradicating the organism
- Prevention of nonsuppurative (e.g., acute rheumatic fever) and suppurative complications
- Improvement of clinical symptoms and signs
- Decrease in contagiousness
- Reduction in transmission of GAS to family members and other close contacts of the patient
- Resumption of usual activities
- Minimization of potential adverse effects of inappropriate antimicrobial therapy

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

The panel identified up-to-date valid systematic reviews from the MEDLINE database, PubMed, and the Cochrane Library, and in selected cases the panel also referenced lists of the most recent narrative reviews or studies on the topic. Unless specified otherwise, the search period was 1980–2012 and was restricted to the English-language literature. Articles were also retrieved by searches for clinical diagnosis, laboratory diagnosis, symptoms and signs, and microbiology. The panel members contributed reference lists in these areas.

Primary key search terms were as follows:

- Pharyngitis
- Streptococci
- Throat culture
- Rapid streptococcal tests
- Pharyngeal carriers
- Tonsillectomy
- Streptococcal antibody tests

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

See the "Rating Scheme for the Strength of the Recommendations" field.

Methods Used to Analyze the Evidence

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

The quality of evidence was evaluated after the literature review. The panel based judgments on the reviews and, if applicable, on additional studies published after the reviews were done. When systematic reviews were unavailable, the panel evaluated the original studies to inform judgments about the quality of the underlying evidence that were based on examination of these studies.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Panel Composition

A panel of eight multidisciplinary experts in the management of streptococcal pharyngitis in children and adults was convened in 2009. The panel consisted of internists and pediatricians, including adult and pediatric infectious disease specialists and a general pediatrician.

Process Overview

The group convened a face-to-face meeting in 2009 in which an outline of the guideline was discussed and the process of guideline development using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach was explained. The GRADE approach offers a structured, systematic, and transparent process to formulate recommendations on the basis of explicit criteria that go beyond just the quality of available evidence. This was followed by a series of teleconferences in which a list of clinical questions to be addressed in the guideline was generated, discussed, and prioritized.

Consensus Development Based on Evidence

The Panel met on >4 occasions via teleconference (including subgroup calls) and once in person to complete the work on the guideline. The purpose of the teleconferences was to discuss the questions, distribute writing assignments, and finalize recommendations. All members of the Panel participated in the preparation and review of the draft guideline.

Rating Scheme for the Strength of the Recommendations

Strength of Recommendations and Quality of the Evidence			
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Strong recommendation,	Desirable effects clearly outweigh undesirable effects, or	Evidence from RCTs with important limitations (inconsistent	Recommendation can apply to most patients in most circumstances; further research (if

Strength of Recommendations and Quality of the Evidence			
Strength of Recommendation and Quality of Evidence	**Clarity of Balance between Desirable and Undesirable Effects**	**Methodologic Quality of Supporting Evidence (Examples)**	**Implications**
moderate-quality evidence	vice versa	results, methodologic flaws, indirect, or imprecise) or exceptionally strong evidence from unbiased observational studies	performed) is likely to have an important impact on confidence in the estimate of effect and may change the estimate.
Strong recommendation, low-quality evidence	Desirable effects clearly outweigh undesirable effects, or vice versa	Evidence for at least 1 critical outcome from observational studies, RCTs with serious flaws or indirect evidence	Recommendation may change when higher-quality evidence becomes available; further research (if performed) is likely to have an important impact on confidence in the estimate of effect and is likely to change the estimate.
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Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

All members of the Panel participated in the preparation and review of the draft guideline. Feedback was obtained from external peer reviews. The guideline was reviewed and approved by the Infectious Diseases Society of America (IDSA) Standards and Practice Guidelines Committee (SPGC) and the IDSA Board of Directors prior to dissemination.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

- Accurate diagnosis of group A streptococcal (GAS) pharyngitis
- Effective antimicrobial and adjunctive treatment of GAS pharyngitis
- Prevention of inappropriate administration of antimicrobials to large numbers of patients with nonstreptococcal pharyngitis

Potential Harms

- Side effects of antibiotic therapy (e.g., rash, diarrhea, rarely anaphylaxis).
- Unnecessary use of broad-spectrum antibiotics leads to concerns about the potential spread of antibiotic-resistant organisms in the population.
- Some penicillin-allergic persons (up to 10%) are also allergic to cephalosporins, and these agents should not be used in patients with immediate (anaphylactic-type) hypersensitivity to penicillin.
- Erythromycin is associated with substantially higher rates of gastrointestinal side effects than the other agents. Strains of GAS resistant to these agents have been highly prevalent in some areas of the world and have resulted in treatment failures.
- A variety of topical agents have been marketed for therapy of acute pharyngitis. These include rinses, sprays, and lozenges. Lozenges may be effective but represent a choking hazard for young children.

Contraindications

Contraindications

Aspirin should be avoided in children.

Qualifying Statements

Qualifying Statements

It is important to realize that guidelines cannot always account for individual variation among patients. They are not intended to supplant physician judgment with respect to particular patients or special clinical situations. Infectious Diseases Society of America (IDSA) considers adherence to these guidelines to be voluntary, with the ultimate determination regarding their application to be made by the physician in the light of each patient’s individual circumstances.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

Shulman ST, Bisno AL, Clegg HW, Gerber MA, Kaplan EL, Lee G, Martin JM, Van Beneden C. Clinical practice guideline for the diagnosis and management of group A streptococcal pharyngitis: 2012 update by the Infectious Diseases Society of America. Clin Infect Dis. 2012 Nov;55(10):e86-e102. [134 references] PubMed

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

1997 (revised 2012)

Guideline Developer(s)

Infectious Diseases Society of America - Medical Specialty Society

Source(s) of Funding

Infectious Diseases Society of America

Guideline Committee

Expert Panel

Composition of Group That Authored the Guideline

Panel Members: Stanford T. Shulman, Department of Pediatrics, Division of Infectious Diseases, Ann & Robert H. Lurie Children's Hospital, Northwestern University Feinberg School of Medicine, Chicago, Illinois; Alan L. Bisno, Department of Medicine, University of Miami Miller School of Medicine, Miami Veterans Affairs Healthcare System, Miami, Florida; Herbert W. Clegg, Department of Pediatrics, Hemby Children's Hospital and Eastover Pediatrics, Charlotte, North Carolina; Michael A. Gerber, Department of Pediatrics, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio; Edward L. Kaplan, Department of Pediatrics, University of Minnesota Medical School, Minneapolis, Minnesota; Grace Lee, Division of Infectious Diseases, Boston Children's Hospital, Boston, Massachusetts; Judith M. Martin, Department of Pediatrics, University of Pittsburgh, Pittsburgh, Pennsylvania; Chris Van Beneden, Respiratory Diseases Branch, National Center for Immunization and Respiratory Diseases, Centers for Disease Control and Prevention, Atlanta, Georgia

Financial Disclosures/Conflicts of Interest

Guidelines and Conflict of Interest

All members of the expert panel complied with the Infectious Diseases Society of America (IDSA) policy regarding conflicts of interest, which requires disclosure of any financial or other interest that might be construed as constituting an actual, potential, or apparent conflict. Members of the expert Panel were provided a conflict of interest disclosure statement from the IDSA and were asked to identify ties to companies developing products that might be affected by promulgation of the guideline. Information was requested regarding employment, consultancies, stock ownership, honoraria, research funding, expert testimony, and membership on company advisory committees. The Panel made decisions on a case-by-case basis about whether an individual's role should be limited as a result of a conflict. No limiting conflicts were identified.

Potential Conflicts of Interest

The following list is a reflection of what has been reported to the IDSA. To provide thorough transparency, the IDSA requires full disclosure of all relationships, regardless of relevancy to the guideline topic. The reader of these guidelines should be mindful of this when the list of disclosures is reviewed. S. S. has served as a consultant to Novartis Vaccines and Merck Vaccines and received research support from Quidel. A. B. has served as a consultant for SPD Development, Cornerstone BioPharma, and Rib-X Pharmaceuticals. All other authors report no potential conflicts.

All authors have submitted the International Committee of Medical Journal Editors (ICMJE) Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Bisno AL, Gerber MA, Gwaltney JM, Kaplan EL, Schwartz RH. Practice guidelines for the diagnosis and management of group A streptococcal pharyngitis. Clin Infect Dis 2002 Jul 15;35(2):113-25. [96 references]

Guideline Availability

Electronic copies: Available in Portable Document Format (PDF) from the Infectious Diseases Society of America (IDSA) Web site .

Availability of Companion Documents

The following is available:

- Clinical practice guideline for the diagnosis and management of group A streptococcal pharyngitis: 2012 update by the Infectious Diseases Society of America. Podcast. Infectious Diseases Society of America (IDSA); 2012. Available from the Infectious Diseases Society of America (IDSA) Web site .

Patient Resources

None available

NGC Status

This summary was completed by ECRI on January 15, 1999. The information was verified by the guideline developer as of March 22, 1999. This summary was updated on September 9, 2002. The updated information was verified by the guideline developer on September 12, 2002. This summary was updated by ECRI Institute on October 8, 2012. The updated information was verified by the guideline developer on November 2, 2012. This summary was updated by ECRI Institute on October 28, 2013 following the U.S. Food and Drug Administration advisory on Acetaminophen. This summary was updated by ECRI Institute on September 18, 2015 following the U.S. Food and Drug Administration advisory on non-aspirin nonsteroidal anti-inflammatory drugs (NSAIDs).

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